

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### ***Listing of Claims:***

1-45. (Canceled)

46. (Currently amended) A method for detecting an individual ~~determining whether there is an increased~~ at risk of developing thrombosis in an individual, said method comprising:

(a) obtaining a sample from the individual;

(b) conducting a nucleic acid assay on the sample, wherein the nucleic acid assay is a hybridization assay or a sequencing assay;

comparing the individual's Factor V gene sequence to a normal Factor V gene sequence;  
and

(c) determining abnormal presence or absence of at least one nucleic acid fragment or sequence in the individual's Factor V gene compared to a normal control; and determining, based on the comparison, whether the individual's Factor V gene sequence is abnormal, thereby

(d) detecting ~~determining whether~~ the individual has an increased at risk of developing thrombosis based on the determination of step (c).

47-52. (Canceled)

53. (Currently amended) The method of claim 46, wherein the nucleic acid assay is a sequencing assay. ~~comprising sequencing the individual's Factor V gene.~~

54. (Currently amended) A method for ~~determining an occurrence~~ a presence of a Factor V gene mutation associated with Activated Protein C (APC)-resistance in an individual at risk for APC-resistance, the method comprising the steps of:

(a) obtaining a sample from the individual;

(b) conducting ~~an~~ a nucleic acid sequencing assay on a ~~genetic material obtained from a~~ cell ~~the sample using reagents specific for the Factor V gene to determine the Factor V gene~~ sequence ~~of the individual~~; and

(c) ~~determining whether there is an~~ the ~~occurrence~~presence of the ~~mutation in the~~ Factor V gene mutation associated with APC-resistance in the individual by comparing the sequence of the Factor V gene from step (b) to a normal Factor V gene sequence ~~locus, wherein the mutation gives rise to expression of a mutated Factor V molecule associated with APC resistance.~~

55. (Currently amended) The method of claim 54, wherein the mutation is determined as an abnormal absence or presence of at least one ~~nucleic acid fragment, abnormal nucleic acid nucleotide sequence, or combinations thereof~~, in the Factor V gene.

56-63. (Canceled)

64. (New) The method of claim 53, wherein the sequencing assay comprises sequencing the Factor V gene using reagents specific for the Factor V gene.

65. (New) The method of claim 64, wherein the detecting step detects an abnormal nucleotide sequence in the Factor V gene.